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ANNUAL REPORT

OF

THE MINES DIVISION

OF THE

Department of Mines and Minerals

OF THE

PROVINCE OF ALBERTA

1970

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Edmonton, Alberta,
February 1st, 1971.

TO THE HONOURABLE A. RUSSELL PATRICK,
Minister of Mines and Minerals.

Sir:

I have the honour to submit the Annual Report of the Mines Division of the Department of Mines and Minerals for the year ending December 31st, 1970.

Respectfully submitted,
PHILIP MELSON,
Director of Mines.

ANNUAL REPORT OF THE MINES DIVISION FOR THE YEAR ENDING DECEMBER 31st, 1970

In this report tonnages are quoted in tons of 2,000 pounds.

The output of coal from the mines in the province was 6,783,911 tons, with a valuation of $26,710,488. This shows an increase of 2,357,851 tons, with an increase of $13,227,440, compared with the previous year.

There were 150 tons of briquettes sold from stockpile. They were valued at $1,827.

The disposition of coal for 1970 and comparison with the previous year follows:

	1970 (Tons)	1969 (Tons)
Sold for consumption in Alberta	3,606,168	2,991,312
Sold for consumption in British Columbia	66,245	143,783
Sold for consumption in Saskatchewan	186,972	71,480
Sold for consumption in Manitoba	69,387	67,479
Sold for consumption in Ontario	28,143	13,430
Sold for consumption elsewhere	....	349
Sold to the United States	6,126	10,651
Sold to Japan	2,394,255	891,769
Sold to railway companies	1,629	2,967
Put to stock	424,986	375,402

The above tonnages include lifted from stock and waste heaps which are not included in the total output.

The Alberta consumption includes coal used under colliery boilers.

There were 6 underground mines and 22 strip mines making a total of 28 mines producing coal during the year. The mines employed 1,757 persons who worked 375,099 shifts. This shows a decrease of one mine, an increase of 548 persons, and an increase of 100,415 shifts, compared with the previous year. There were 22 strip mines employing 512 persons who worked 106,850 shifts and produced 4,735,277 tons. This shows a decrease of one strip mine, an increase of 216 persons, an increase of 38,395 shifts, and an increase of 1,400,815 tons from stripping operations, compared with the previous year.

The number of mines using electrical power during the year was 25. The following table shows the comparison of purchased electrical power in K.W. hrs. by mines for the past five years.

1966	25,690,710
1967	35,270,464
1968	34,507,138
1969	40,784,932
1970	67,554,165

The total horsepower of electrical motors in use was 60,212 h.p., an increase of 23,150 h.p., in comparison with 1969. The following tables show a breakdown of horsepower in use, both in sub-surface mining operations and strip mining operations.

SUBSURFACE OPERATIONS

Above Ground		Below Ground	
Duty	H.P.	Duty	H.P.
Haulage	3,583	Haulage	4,152
Ventilation	1,170	Ventilation	693
Air Compressing	3,000	Pumping	431
Preparation Plants	10,800	Mechanical Mining	10,192
Miscellaneous	2,142	Miscellaneous	465
Total	20,695	Total	15,933

STRIP MINING OPERATIONS

Duty	H.P.
Preparation Plants	8,616
Compressors	728
Pumping	368
Drilling	38
Electric Shovels & Draglines	12,754
Miscellaneous	1,080
Total	23,584

The following figures show the number of certain types of electrical equipment used underground during the past five years.

	1966	1967	1968	1969	1970
Cutting Machines	43	36	28	24	17
Battery Vehicles	20	16	16	18	23
Trolley Locomotives	7	2	2	2	4
Conveyors	25	32	28	38	64
Drills	49	38	37	30	36
Continuous Miners	3	5	6	14	19
Shuttle Cars	3	5	7	11	25
Face Loaders	9	10	10	13	17

There were 11 diesel powered locomotives and vehicles in operation underground.

Seventeen quarries produced 32,272,426 tons of shale, clay, limestone, building stone, bentonite and oil sands, an increase of 4,602,804 tons compared with the previous year.

The total horsepower of electrical motors used in quarries was 24,802 h.p. This is an increase of 5,845 h.p., over the 1969 total.

Two hundred and three inspections were made under the terms of The Coal Mines Regulation Act, and 31 under The Quarries Regulation Act.

In addition to the above, 43 inspections were made at 32 abandoned mining locations. Remedial work was required and completed at 10 mines. Twenty inspections were made for the cancellation of mining leases.

All complaints made to the Division were investigated.

The total number of accidents in coal mines reported was 38. The number of fatal accidents was 1 compared to 3 in the previous year. There was one accident reported in quarries.

There was one prosecution for contravention of The Coal Mines Regulation Act.

Written examinations under The Coal Mines Regulation Act were held on May 5th, 6th and 7th at Edmonton, Calgary and Grande Cache with successful candidates as follows: 2 first class, 3 second class, 9 third class, 2 surveyors (underground mines), 10 first class mine electricians, 1 second class mine electrician, 3 foremen (strip mines), 2 surveyors (strip mines) and 2 blasters (strip mines).

Written examinations under The Quarries Regulation Act were held at Edmonton and Calgary on May 5th, 1970, and there were no successful candidates.

Two blasters' certificates were issued to successful candidates on oral examination.

Seven examinations were held for miners' certificates and 123 certificates were issued to successful candidates. Eleven substitute miners' certificates, 109 miners' provisional certificates and 460 miners' permits were granted, making a total of 703 certificates which is an increase of 211 certificates for the year.

Thirty-five Mine Rescue certificates were issued. A provincial and a national mine rescue competition were held during the year. Canmore Mine Rescue Team represented Alberta at the Fourth Canadian Mine Rescue competition held at Yellowknife, N.W.T.

There were two dangerous occurrences during the year which could have resulted in serious injury to persons.

An approved switchbox ruptured and resulted in a small fire which was quickly extinguished by nearby personnel. It appears that a fault developed on the line side of the switchgear and the resulting arc developed such pressure as to rupture the enclosures. The long distance from the switchbox to the transformer is thought to be a contributory factor in the failure of the safety devices to immediately isolate the faulty circuit.

A small explosion in the load out gallery of the preparation plant was investigated. It seems that as the coal in the silo is released on to the loading belt, there is considerable methane made and somehow this was ignited, presumably by friction from a chain drive. Although four vents were provided for ventilation, four exhaust fans have now been installed, and a methane monitor installed to stop the operation when methane is recorded in the gallery.

One permit for a new mine was issued late in the year, and only preliminary work has been started.

Mine No. 2, operated by The Canmore Mines, Limited, Canmore, continued making improvements to the preparation plant and also obtained the following stripping equipment: two dozers, seven trucks, a H120C Payloader and a motor grader.

Mine No. 1747, operated by Coleman Collieries Limited, Coleman, drove two rock tunnels at Racehorse Creek to intersect the seam at a lower level. A shop and washhouse have been built. One Joy 6 CM continuous miner and ancillary equipment and one Hunslet MT60 diesel supply car was obtained. At Mine No. 1764, the strip mine, two Terec 50 ton rock dump trucks and a 2½ yd. Bucyrus diesel shovel were added to the equipment.

Mine No. 1765, operated by McIntyre Coal Mines Limited, near Grande Cache, installed the following equipment at the two underground mines. Two Dosco road headers, 1 Joy 6 CM continuous miner and ancillary equipment, 1 Lee Norse 45 CM continuous miner and ancillary equipment, 13 Joy 10SC shuttle cars, 2 diesel powered Torkars, 5 Joy 14BU loaders, 8 Fletcher roof-bolting machines, 22 rock dusting machines, 5 battery powered supply cars, 8 Stamler mobile breaker feeders. Equipment for a longwall face in each mine was introduced. Anderson - Boyes ranging drum shearers, powered self-advancing supports and Meco panzer conveyors were used. The first operation met with limited success as modifications to the powered supports were required, and these modifications are being implemented. The second face is to start coal operations early in the new year. Regular shipments for export were started in late summer upon completion of the preparation plant.

Mine No. 1768, operated by Cardinal River Coals Ltd., Luscar, completed the Mine Services building and preparation plant during the spring and started regular shipments in July. A Manitowac 5 cu. yd. diesel shovel, a 15 yd. K.W. Dart front end loader and 3 D-9 Caterpillar dozers were added to the mine equipment.

Mine No. 1769, operated by Calgary Power Ltd., near Highvale, started coal production during the latter part of 1970. A Mine Services building containing offices, first aid room, shop and garage was completed and the coal handling plant was put in operation. The following equipment was obtained during the year: 2 Caterpillar dozers, a 25 yd. Marion 7800 electric dragline, two 10 cu. yd. Bucyrus Erie shovels, five 50 ton Euclid tractor trailers, 8 Ford trucks and a Champion road grader.

NUMBER OF MINES PRODUCING, OPENED AND ABANDONED
DURING THE YEAR ACCORDING TO AREAS AND KIND OF COAL

Director of Mines - P. Melson, Agriculture Building,
Edmonton 6, Alberta. Telephone 229-4421

Electrical Inspector of Mines - J.S. Watson, Agriculture
Building, Edmonton 6, Alberta. Telephone 229-4425

Inspection District	Area	Area Number	Character of Coal	No. of Mines producing during the year	No. of Mines opened during the year	No. of Mines abandoned during the year	Name and Address of District Inspectors of Mines
Calgary	Carbon	6	Sub-bituminous	1	...	1	J. J. Kubin, 906, John J. Bowlen Bldg., 620 - 7th Ave. S.W., Calgary, Alberta. Tel. 268-8340
	Cascade	7	Bituminous	1	...	...	
	Drumheller	14	Sub-bituminous	2	...	1	
	Sheerness	38	Sub-bituminous	1	...	...	
Edmonton	Ardley	1	Sub-bituminous	1	...	...	M. Aschacker, J. Shaw, 801, Agriculture Bldg., Edmonton 6, Alberta. Tel. 229-4422 229-4424
	Camrose	5	Sub-bituminous	1	...	...	
	Castor	8	Sub-bituminous	3	...	...	
	Coalspur	11	Bituminous	1	...	...	
	Edmonton	15	Sub-bituminous	3	...	1	
	Mountain Park	24	Bituminous	1	1		
	Pembina	31	Sub-bituminous	4	...	...	
	Smoky River	10	Bituminous	1	...	...	
	Tofield	42	Sub-bituminous	1	...	...	
	Westlock	45	Sub-bituminous	2	...	...	
Lethbridge	Brooks	3	Sub-bituminous	1	...	...	I. N. Potter, Administration Bldg., 909 - 3rd Ave. North Lethbridge, Alberta. Tel. 328-4471
	Crowsnest	12-13	Bituminous	3	...	...	
	Lethbridge	20	Bituminous	...	...	1	
	Taber	41	Sub-bituminous	1	...	...	
	Total.......	..	....	28	1	4	

PARTICULARS WITH REFERENCE TO THE COAL MINING INDUSTRY IN THE PROVINCE OF ALBERTA DURING THE YEAR ENDING DECEMBER 31, 1970.

SUMMARY OF STATISTICS

Number of tons of coal produced	6,783,911
Total valuation of coal sold	$ 26,710,488
Total valuation of 150 tons of briquettes sold from stockpile	$ 1,827
Number of mines in operation	28
Number of mines opened	1
Number of mines abandoned	4

1 mine or 03.57% of the total operating produced 00.01% of the output
2 mines or 07.14% of the total operating produced 02.48% of the output
3 mines or 10.72% of the total operating produced 04.92% of the output
4 mines or 14.28% of the total operating produced 00.19% of the output
5 mines or 17.86% of the total operating produced 00.60% of the output
6 mines or 21.43% of the total operating produced 01.55% of the output
7 mines or 25.00% of the total operating produced 90.25% of the output

Average number of persons employed	1,757
Average number of persons employed in underground mining	1,245
Average number of persons employed in strip mining	512
Average number of days worked	227
Total number of manshifts	375,099
Number of separate accidents causing loss of life	1
Number of fatal accidents above ground	1
Number of fatal accidents below ground	...
Number of serious accidents above ground	1
Number of serious accidents below ground	8
Number of slight accidents above ground	9
Number of slight accidents below ground	19
Total purchased electric power (kilowatt hours)	67,554,165
Number of prosecutions instituted	2
Number of trade name certificates issued	2
Number of provisional first class certificates issued	4
Number of provisional second class certificates issued	18
Number of provisional third class certificates issued	37
Number of provisional surveyor' certificates issued	1
Number of provisional electricians' certificates issued	35
Number of provisional strip mine managers' certificates issued	2
Number of provisional strip mine foremen's certificates issued	18
Number of provisional strip mine blasters' certificates issued	3
Number of provisional miners' certificates issued	109
Number of miners' permits issued	460
Number of miners' certificates issued	123
Number of first class certificates issued	5
Number of second class certificates issued	3
Number of third class certificates issued	11
Number of mine surveyors' certificates issued	2
Number of first class electricians' certificates issued	7
Number of second class electricians' certificates issued	2
Number of strip mine managers' certificates issued	2
Number of strip mine foremen's certificates issued	3
Number of strip mine blasters' certificates issued	3
Number of strip mine surveyors' certificates issued	2
Number of first class certificates issued up to Dec. 31/70	323
Number of second class certificates issued up to Dec. 31/70	629
Number of third class certificates issued up to Dec. 31/70	1,886
Number of mine surveyors' certificates issued up to Dec. 31/70	255
Number of first class mine electricians' certificates issued up to Dec. 31/70	187
Number of second class mine electricians' certificates issued up to Dec. 31/70	142
Number of strip mine managers' certificates issued up to Dec. 31/70	185
Number of strip mine foremen's certificates issued up to Dec. 31/70	271
Number of strip mine blasters' certificates issued up to Dec. 31/70	32
Number of strip mine surveyors' certificates issued up to Dec. 31/70	4
Number of miners' certificates issued up to Dec. 31/70	21,332

PARTICULARS WITH REFERENCE TO QUARRIES IN THE PROVINCE OF ALBERTA DURING THE YEAR ENDING DECEMBER 31, 1970.

SUMMARY OF STATISTICS

Number of tons of limestone produced	1,482,741
Number of tons of bentonite produced	5,001
Number of tons of shale and clay produced	480,731
Number of tons of building stone produced	60
Number of tons of oil-sands produced	30,303,893
Number of quarries in operation	17
Number of quarries opened	2
Number of quarries abandoned	2
Number of persons employed	367
Average number of days worked	280
Total number of man-shifts	102,486
Number of accidents	1
Number of pounds of dynamite used	125,405
Number of pounds of ammonia nitrate used	4,705,900
Number of detonators used	6,661
Number of shots fired	9,280
Number of primers used	6,892
Number of missed fire shots	14
Amount of prima cord used (feet)	412,100
Number of provisional managers' certificates issued	3
Number of provisional foremen's certificates issued	12
Number of provisional blasters' certificates issued	...
Number of managers' certificates issued	...
Number of foremen's certificates issued	...
Number of blasters' certificates issued	2
Number of managers' certificates issued up to Dec. 31st, 1970	35
Number of foremen's certificates issued up to Dec. 31st, 1970	69
Number of blasters' certificates issued up to Dec. 31st, 1970	78

ANNUAL PRODUCTION AND VALUATION OF COAL FROM MINES IN THE PROVINCE OF ALBERTA
For the Years 1951 to 1970 Inclusive

Year	Output Tons	Valuation Dollars
1951	7,661,276	$ 41,000,953
1952	7,194,472	39,974,318
1953	5,917,423	32,158,435
1954	4,859,136	26,349,275
1955	4,456,578	23,486,399
1956	4,329,639	23,283,966
1957	3,155,354	17,287,229
1958	2,519,939	12,778,111
1959	2,549,517	12,892,747
1960	2,404,093	11,439,705
1961	2,027,826	10,471,217
1962	2,087,310	9,983,327
1963	2,289,943	9,866,962
1964	2,971,133	11,189,087
1965	3,413,928	12,172,001
1966	3,467,254	12,067,044
1967	3,601,559	12,506,450
1968	3,925,114	12,597,181
1969	4,426,060	13,483,048
1970	6,783,911	26,710,488

PER CAPITA PRODUCTION OF MINES IN THE PROVINCE
For the Years 1951 to 1970 Inclusive

Year	Gross Tons of coal mined	Total average No. of men employed	Tons of coal mined per man employed
1951	7,661,276	7,339	1,044
1952	7,194,472	6,936	1,037
1953	5,917,423	5,760	1,027
1954	4,859,136	4,719	1,030
1955	4,456,578	3,801	1,172
1956	4,329,639	3,443	1,258
1957	3,155,354	2,795	1,129
1958	2,519,939	2,021	1,247
1959	2,549,517	1,720	1,482
1960	2,404,093	1,729	1,390
1961	2,027,826	1,323	1,533
1962	2,087,310	1,281	1,629
1963	2,289,943	1,151	1,989
1964	2,971,133	1,188	2,501
1965	3,413,928	1,181	2,891
1966	3,467,254	1,146	3,026
1967	3,601,559	1,162	3,099
1968	3,925,114	1,103	3,559
1969	4,426,060	1,209	3,661
1970	6,783,911	1,654	4,101

CLASSIFICATION OF OUTPUT IN TONS DURING THE YEARS 1951 to 1970 INCLUSIVE

Year	Bituminous	Sub-bituminous	Coal used in Coke Production	Tons of Briquettes Made	Tons of Coke Made
1951	4,659,289	3,001,987	6,957	345,768	3,959
1952	4,378,622	2,815,850	3,474	661,862	574
1953	3,517,499	2,399,924	...	665,556	...
1954	2,402,185	2,456,951	...	635,501	...
1955	2,114,892	2,341,686	...	435,785	...
1956	2,064,723	2,264,916	...	525,202	...
1957	1,265,844	1,889,510	...	265,645	...
1958	834,256	1,685,683	...	128,512	...
1959	814,819	1,734,698	...	99,499	...
1960	863,517	1,540,576	* 2,352	44,111	* 1,216
1961	666,226	1,361,600	* 661	34,534	* 491
1962	590,139	1,497,171	...	28,631	* 40
1963	635,650	1,654,293	* 843	37,358	* 11,677
1964	866,221	2,104,912	* 6,412	38,230	* 19,971
1965	859,176	2,554,752	* 46,016	34,658	* 38,804
1966	879,569	2,587,685	* 28,824	27,904	* 11,387
1967	937,836	2,663,723	* 20,241	21,503	* 7,430
1968	948,480	2,976,634	* 1,658	7,236	* 1,261
1969	1,231,108	3,194,952	...	2,766	...
1970	2,863,705	3,920,206	...	...	...

* Char

AMOUNT OF COAL SOLD IN TONS DURING THE YEARS 1951 to 1970 INCLUSIVE FOR CONSUMPTION IN:

Year	Railways	Alberta	B.C.	Sask.	Manitoba	Ontario	Quebec	U.S.A.	Japan	Total
1951................	2,443,326	1,427,114	898,533	1,322,162	492,737	182,753	...	80,270	44,317	6,891,212
1952................	2,065,365	1,234,307	1,021,484	1,241,716	384,924	126,381	...	71,817	1,588	6,147,582
1953................	1,625,783	1,045,482	859,385	1,034,594	274,758	73,117	...	47,119	...	4,960,238
1954................	743,743	1,064,817	891,194	995,882	292,455	85,836	...	33,124	...	4,107,051
1955................	431,639	1,080,379	932,764	893,377	293,719	90,727	...	32,941	...	3,755,546
1956................	385,388	1,020,538	860,329	871,719	304,918	75,029	120	45,692	...	3,563,733
1957................	152,693	876,395	672,527	680,297	247,480	68,379	165	46,079	40,745	2,784,760
1958................	56,420	838,535	532,911	584,025	226,302	54,887	122	37,154	21,952	2,352,308
1959................	39,122	874,622	437,118	549,663	239,503	52,828	80	33,455	124,719	2,351,110
1960................	1,045	845,806	379,668	362,383	201,372	40,305	157	30,283	361,336	2,222,355
1961................	51,128	791,631	321,909	232,848	159,744	35,466	115	18,066	343,720	1,954,627
1962................	32,003	901,107	283,651	347,012	153,561	29,952	75	9,219	316,787	2,073,367
1963................	16,001	1,073,606	262,433	343,634	131,471	29,309	118	5,583	410,558	2,272,713
1964................	14,451	1,620,893	261,990	279,171	122,590	32,261	x 86	14,805	612,544	2,958,791
1965................	10,798	1,928,684	276,608	388,796	130,861	31,733	85	14,123	614,801	3,396,489
1966................	6,631	2,034,814	197,521	376,589	115,771	24,893	* 8	12,206	709,977	3,478,410
1967................	3,960	2,019,036	166,668	503,396	92,934	21,956	...	9,857	773,505	3,591,312
1968................	3,201	2,672,852	142,589	175,948	73,558	15,097	54	9,549	809,437	3,902,285
1969................	2,967	2,991,312	143,783	71,480	67,479	13,430	349	10,651	891,769	4,193,220
1970................	1,629	3,606,168	66,245	186,972	69,387	28,143	...	6,126	2,394,255	6,358,925

x Includes 46 tons to N.W.T.
* Includes 8 tons to West Germany

COAL PRODUCED BY YEARS FROM 1966 to 1970

BITUMINOUS COAL FIELD

Areas	1966	1967	1968	1969	1970
Group 1:					
Cascade	245,469	288,954	283,719	267,266	333,945
Group 2:					
Crowsnest	632,974	620,962	660,780	769,489	817,173
Mountain Park	...	...	...	...	618,021
Smoky River	...	24,835	1,265	193,522	1,094,379
Group 3:					
Coalspur	...	...	...	199	187
Lethbridge	1,126	3,085	2,716	632	...
Total	879,569	937,836	948,480	1,231,108	2,863,705

SUB-BITUMINOUS COAL FIELD

Group 4:					
Ardley	30,358	25,130	23,366	24,186	21,472
Brooks	6,384	5,160	4,946	4,856	3,515
Carbon	9,028	7,457	4,883	4,271	3,354
Champion	1,507	458	...	...	...
Drumheller	231,893	185,037	162,018	150,336	80,406
Edmonton	80,288	63,123	47,892	47,007	42,803
Pembina	1,133,180	1,196,637	1,945,467	2,135,158	2,533,587
Taber	60,670	9,929	4,713	3,926	3,457
Wetaskiwin	1,372	114	...	...	...
Group 5:					
Camrose	17,808	16,842	15,408	15,398	13,949
Castor	774,339	859,694	636,349	750,748	1,086,418
Redcliff	1,856	541	...	...	...
Sheerness	199,248	259,720	100,115	29,302	102,719
Tofield	15,504	12,026	9,629	8,616	9,312
Westlock	24,250	21,855	21,848	21,148	19,214
Total	2,587,685	2,663,723	2,976,634	3,194,952	3,920,206

HOW THE TOTAL TONNAGE OF BITUMINOUS COAL FROM THE PROVINCE WAS DISPOSED OF BY AREAS DURING 1970

Areas	Sold for Consumption in:								Total Disposition	Put to Stock	Lifted from Stock	Total Tonnage
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	United States	Japan				
Group 1:												
Cascade..........	...	886	13324	...	3081	6103	6126	293520	323040	69560	58655	333945
Group 2:												
Crowsnest.........	...	1239	11600	...	...	...	...	818801	831640	10043	24510	817173
Mountain Park.....	...	...	...	...	4897	...	...	613124	618021	...	...	618021
Smoky River.......	...	...	...	...	...	...	...	668810	668810	1094379	668810	1094379
Group 3:												
Coalspur..........	...	...	45	...	142	...	...	...	187	...	...	187
Total...............	...	2125	24969	...	8120	6103	6126	2394255	2441698	1173982	751975	2863705

HOW THE TOTAL TONNAGE OF SUB-BITUMINOUS COAL FROM THE PROVINCE WAS DISPOSED OF BY AREAS DURING 1970

Areas	Sold for Consumption in:								Total Disposition	Put to Stock	Lifted from Stock	Total Tonnage
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States				
Group 4:												
Ardley.............	...	21472	...	...	...	...	...	...	21472	...	...	21472
Brooks.............	...	3515	...	...	...	...	...	...	3515	...	...	3515
Carbon.............	...	3354	...	...	...	...	...	...	3354	...	...	3354
Drumheller.........	435	31687	14369	23464	6303	1169	...	...	77427	28580	25601	80406
Edmonton...........	...	42572	...	...	...	231	...	...	42803	...	...	42803
Pembina............	...	2533587	...	...	...	...	...	...	2533587	...	...	2533587
Taber..............	...	3457	...	...	...	...	...	...	3457	...	...	3457
Group 5:												
Camrose............	...	13949	...	...	...	...	...	...	13949	...	...	13949
Castor.............	1194	909337	26907	92315	54552	2113	...	...	1086418	...	...	1086418
Sheerness..........	...	12587	...	71193	412	18527	...	...	102719	...	...	102719
Tofield............	...	9312	...	...	...	...	...	...	9312	...	...	9312
Westlock...........	...	19214	...	...	...	...	...	...	19214	...	...	19214
Total................	1629	3604043	41276	186972	61267	22040	...	...	3917227	28580	25601	3920206

HOW THE TOTAL TONNAGE OF COAL FROM THE PROVINCE WAS DISPOSED OF BY MONTHS DURING 1970

Months	Sold for Consumption in:									Total Disposition	Put to Stock	Lifted from Stock	Total Tonnage
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States	Japan				
January........	268	355131	11008	6734	10438	1303	...	655	89655	475192	45415	14960	505647
February.......	156	305076	9787	3816	6280	482	...	1221	64352	391170	74726	8324	457572
March..........	98	323764	3403	30473	4178	750	...	852	123235	486753	72593	22917	536429
April..........	188	290214	2377	33438	1234	503	...	938	99589	428481	101872	5246	525107
May............	105	240910	2068	38930	327	140	...	646	214531	497657	97088	94927	499818
June...........	86	243323	982	36910	143	...	...	574	221411	503429	106846	70165	540110
July...........	66	192525	201	7367	42	7219	...	141	265868	473429	85507	90579	468357
August.........	58	259855	850	130	158	313	...	373	221418	483155	102987	92059	494083
September......	191	294003	8062	4082	6132	180	...	224	202056	514930	106993	7569	614354
October........	...	329281	9148	11102	11501	1930	...	222	214489	577673	138963	58173	658463
November.......	168	416752	9073	7301	12217	7708	...	142	310481	763842	119706	130976	752572
December.......	245	355334	9286	6689	16737	7615	...	138	367170	763214	149866	181681	731399
Total..........	1629	3606168	66245	186972	69387	28143	...	6126	2394255	6358925	1202562	777576	6783911
% of Total Disposition:	.03	56.72	1.04	2.94	1.09	.44	...	.09	37.65				

How the total Tonnage of BRIQUETTES from the Province was disposed of during 1970

Briquettes:	...	150	...	...	...	...	...	...	...	150	...	150	...

How the total Tonnage of CHAR from the Province was disposed of during 1970

Char:	...	...	...	...	...	...	...	...	...	...	...	...	...

HOW THE TOTAL TONNAGE OF BITUMINOUS COAL WAS DISPOSED OF BY MONTHS DURING 1970

Months	Sold for Consumption in:									Total Disposition	Put to Stock	Lifted from Stock	Total Tonnage
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States	Japan				
January..........	...	345	6027	...	...	1005	...	655	89655	97687	44941	13368	129260
February.........	...	179	7042	...	...	354	...	1221	64352	73148	74317	6421	141044
March............	...	264	446	...	...	707	...	852	123235	125504	71617	21688	175433
April............	...	169	235	...	...	503	...	938	99589	101434	101013	...	202447
May..............	...	125	293	...	...	140	...	646	214531	215735	91328	94352	212711
June.............	...	58	60	...	...	...	...	574	221411	222103	100540	69279	253364
July.............	...	51	...	...	...	...	...	141	265868	266060	85507	90579	260988
August...........	...	42	257	...	...	313	...	373	221418	222403	102987	92059	233331
September........	...	207	2591	...	...	137	...	224	202056	205215	104482	5086	304611
October..........	...	267	3619	...	628	1561	...	222	214489	220786	133683	55061	299408
November.........	...	232	2209	...	2376	347	...	142	310481	315787	115343	126223	304907
December.........	...	186	2190	...	5116	1036	...	138	367170	375836	148224	177859	346201
Total............	...	2125	24969	...	8120	6103	...	6126	2394255	2441698	1173982	751975	2863705
% of Total Disposition:	...	.09	1.02	...	.33	.25	...	.25	98.06				

HOW THE TOTAL TONNAGE OF SUB-BITUMINOUS COAL WAS DISPOSED OF BY MONTHS DURING 1970

Months	Sold for Consumption in:									Total Disposition	Put to Stock	Lifted from Stock	Total Tonnage
	Sold to Railway Companies	Alberta	British Columbia	Sask.	Manitoba	Ontario	Quebec	United States	Japan				
January........	268	354786	4981	6734	10438	298	...	...	...	377505	474	1592	376387
February.......	156	304897	2745	3816	6280	128	...	...	...	318022	409	1903	316528
March..........	98	323500	2957	30473	4178	43	...	...	...	361249	976	1229	360996
April..........	188	290045	2142	33438	1234	...	...	...	...	327047	859	5246	322660
May............	105	240785	1775	38930	327	...	...	...	...	281922	5760	575	287107
June...........	86	243265	922	36910	143	...	...	...	...	281326	6306	886	286746
July...........	66	192474	201	7367	42	7219	...	...	...	207369	...	...	207369
August.........	58	259813	593	130	158	...	...	...	...	260752	...	...	260752
September......	191	293796	5471	4082	6132	43	...	...	...	309715	2511	2483	309743
October........	...	329014	5529	11102	10873	369	...	...	...	356887	5280	3112	359055
November.......	168	416520	6864	7301	9841	7361	...	...	...	448055	4363	4753	447665
December.......	245	355148	7096	6689	11621	6579	...	...	...	387378	1642	3822	385198
Total:	1629	3604043	41276	186972	61267	22040	...	...	...	3917227	28580	25601	3920206
% of Total Disposition:	.04	92.02	1.05	4.77	1.56	.56							

PER CAPITA PRODUCTION OF MINES BY AREAS

BITUMINOUS COAL FIELD

Area	Strip and Underground Mining					Strip Mining					Underground Mining				
	Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man employed	Total No. of Man-shifts	Tons of coal mined per eight hour man-shift	Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man employed	Total No. of man-shifts	Tons of coal mined per eight hour man-shift	Gross tons of coal mined	Total average No. of men employed	Tons of coal mined per man employed	Total No. of man-shifts	Tons of coal mined per eight hour man-shift
Group 1:															
Cascade.......	333,945	266	1,255	63,769	5.24	60,035	12	5,003	3,729	16.10	273,910	254	1,078	60,040	4.56
Group 2:															
Crowsnest.....	817,173	450	1,816	105,956	7.71	231,219	35	6,606	8,118	28.48	585,954	415	1,412	97,838	5.99
Mountain Park.	618,021	162	3,815	33,435	18.48	618,021	162	3,815	33,435	18.48	...	...	...	...	...
Smoky River...	1,094,379	484	2,261	96,618	11.33	...	...	...	...	...	1,094,379	484	2,261	96,618	11.33
Group 3:															
Coalspur......	187	3	62	12	15.58	187	3	62	12	15.58	...	...	...	...	...
Total...........	2,863,705	1,365	2,098	299,790	9.55	909,462	212	4,290	45,294	20.08	1,954,243	1,153	1,695	254,496	7.68

PER CAPITA PRODUCTION OF MINES BY AREA

SUB-BITUMINOUS COAL FIELD

Group 4:															
Ardley......	21,472	6	3,579	1,480	14.51	21,472	6	3,579	1,480	14.51	...	...	...	...	...
Brooks......	3,515	4	879	870	4.04	3,515	4	879	870	4.04	...	...	...	...	...
Carbon......	3,354	2	1,677	510	6.58	3,354	2	1,677	510	6.58	...	...	...	...	...
Drumheller..	80,406	73	1,101	9,078	8.86	13,634	7	1,948	873	15.62	66,772	66	1,012	8,205	8.14
Edmonton....	42,803	30	1,427	6,508	6.58	15,184	4	3,796	960	15.82	27,619	26	1,062	5,548	4.98
Pembina.....	2,533,587	150	16,890	28,136	90.05	2,533,587	150	16,890	28,136	90.05	...	...	...	...	...
Taber.......	3,457	3	1,152	644	5.37	3,457	3	1,152	644	5.37	...	...	...	...	...
Group 5:															
Camrose.....	13,949	4	3,487	839	16.63	13,949	4	3,487	839	16.63	...	...	...	...	...
Castor......	1,086,418	100	10,864	22,836	47.57	1,086,418	100	10,864	22,836	47.57	...	...	...	...	...
Sheerness...	102,719	10	10,271	2,356	43.60	102,719	10	10,271	2,356	43.60	...	...	...	...	...
Tofield.....	9,312	3	3,104	748	12.45	9,312	3	3,104	748	12.45	...	...	...	...	...
Westlock....	19,214	7	2,745	1,304	14.73	19,214	7	2,745	1,304	14.73	...	...	...	...	...
Total.........	3,920,206	392	10,001	75,309	52.05	3,825,815	300	12,753	61,556	62.15	94,391	92	1,026	13,753	6.86

SUMMARY

Bituminous.....	2,863,705	1,365	2,098	299,790	9.55	909,462	212	4,290	45,294	20.08	1,954,243	1,153	1,695	254,496	7.68
Sub-Bituminous.	3,920,206	392	10,001	75,309	52.05	3,825,815	300	12,753	61,556	62.15	94,391	92	1,026	13,753	6.86
Total.........	6,783,911	1,757	3,861	375,099	18.09	4,735,277	512	9,249	106,850	44.32	2,048,634	1,245	1,645	268,249	7.64

OUTPUT AND NUMBER OF MINES PRODUCING

Kind of Coal	Under 1,000 Tons		1,000 to 5,000 Tons		5,000 to 10,000 Tons		10,000 to 50,000 Tons		50,000 to 100,000 Tons		100,000 to 150,000 Tons		150,000 to 200,000 Tons		200,000 to 300,000 Tons		Over 300,000 Tons		Total	
	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output	No.	Output
Bituminous......	1	187	..	...	..	...	..	...	..	...	2	231,219	..	...	..	...	4	2,632,299	7	2,863,705
Sub-bituminous.	..	...	4	12,721	5	40,546	6	105,681	2	168,879	1	102,719	..	...	..	...	3	3,489,660	21	3,920,206
Total..........	1	187	4	12,721	5	40,546	6	105,681	2	168,879	3	333,938	..	...	..	...	7	6,121,959	28	6,783,911

DISPOSITION OF ALBERTA COAL

	SOLD TO				USED MAKING		FOR COLLIERY BOILERS, RAILROADS ETC.	TOTAL
	INDUSTRIAL CONSUMERS	DEALERS FOR RE-SALE	DOMESTIC CONSUMERS	EMPLOYEES	BRIQUETTES	CHAR		
JANUARY	298587	8900	47260	215	...	...	169	355131
FEBRUARY	274614	3814	26368	174	...	...	106	305076
MARCH	297763	2915	22803	138	...	...	145	323764
APRIL	282557	765	6712	106	...	...	74	290214
MAY	238220	54	2530	35	...	...	71	240910
JUNE	242476	40	745	26	...	...	36	243323
JULY	191840	...	642	8	...	...	35	192525
AUGUST	257534	334	1957	29	...	...	1	259855
SEPTEMBER	275728	3473	14665	133	...	...	4	294003
OCTOBER	294379	5598	29077	214	...	...	13	329281
NOVEMBER	360051	7852	48555	220	...	...	74	416752
DECEMBER	295011	9616	50340	323	...	...	44	355334
TOTAL	3308760	43361	251654	1621	...	...	772	3606168

PRODUCTION OF COAL PER EIGHT-HOUR MAN-SHIFT
For the Years 1951 to 1970 Inclusive

Year	Gross tons of coal mined	Total No. of eight-hour man-shifts	Average No. of tons of coal mined per eight-hour shift
1951.............	7,661,276	1,683,061	4.552
1952.............	7,194,472	1,522,264	4.726
1953.............	5,917,423	1,141,531	5.184
1954.............	4,859,136	943,558	5.150
1955.............	4,456,578	783,239	5.690
1956.............	4,329,639	750,318	5.770
1957.............	3,155,354	535,346	5.894
1958.............	2,519,939	386,636	6.517
1959.............	2,549,517	377,870	6.747
1960.............	2,404,093	366,970	6.551
1961.............	2,027,826	285,142	7.112
1962.............	2,087,310	277,198	7.530
1963.............	2,289,943	254,671	8.992
1964.............	2,971,133	285,039	10.423
1965.............	3,413,928	288,871	11.820
1966.............	3,467,254	275,195	12.590
1967.............	3,601,559	263,969	13.643
1968.............	3,925,114	251,053	15.634
1969.............	4,426,060	274,684	16.113
1970.............	6,783,911	375,099	18.085

AMOUNT OF MINE TIMBER USED DURING THE YEAR

BITUMINOUS COAL FIELD

Area	Timber lineal feet	Lumber B.M. feet	Lagging lineal feet	Ties lineal feet	Roof Bolts
Group 1:					
Cascade..................	145,060	54,250	173,740	7,810	9,600
Group 2:					
Crowsnest................	465,910	864,222	330,000	392	31,182
Smoky River..............	67,000	471,700	145,200	...	117,600
Total....................	677,970	1,390,172	648,940	8,202	158,382

SUB-BITUMINOUS COAL FIELD

Area	Timber lineal feet	Lumber B.M. feet	Lagging lineal feet	Ties lineal feet	Roof Bolts
Group 4:					
Drumheller...............	59,592	...	...	2,844	...
Edmonton.................	7,672	5,500	...	...	...
Total....................	67,264	5,500	...	2,844	...

PARTICULARS OF LAMPS IN THE BITUMINOUS AND SUB-BITUMINOUS COAL FIELDS DURING THE YEARS 1969 and 1970.

BITUMINOUS COAL FIELD

	1969	1970
Portable Electric Lamps, Edison Cap Type...........	745	918
Flame Type..	65	71
Total............................	810	989

SUB-BITUMINOUS COAL FIELD

	1969	1970
Portable Electric Lamps, Edison Cap Type...........	212	196
Flame Type	9	9
Total............................	221	205

QUANTITY OF EXPLOSIVES USED IN POUNDS FOR BLASTING COAL

BITUMINOUS COAL FIELD

Area	Name of Explosives							Total
	Stumping Powder	Monobel	BL-100	CXL-ite	Airdox	Amex	Forcite	
Group 1:								
Cascade.....	...	37,800	...	...	...	...	...	37,800
Group 2:								
Smoky River.	...	81	...	...	...	...	...	81
Total.......	...	37,881	...	...	...	...	...	37,881

SUB-BITUMINOUS COAL FIELD

Area	Stumping Powder	Monobel	BL-100	CXL-ite	Airdox	Amex	Forcite	Total
Group 4:								
Ardley......	...	1,300	...	...	...	...	...	1,300
Brooks......	...	...	920	...	...	...	850	1,770
Carbon......	...	...	...	...	...	...	93	93
Drumheller..	...	...	...	...	12,000	...	...	12,000
Edmonton....	...	4,397	...	...	...	...	...	4,937
Pembina.....	600	...	...	...	...	...	1,510	2,110
Group 5:								
Camrose.....	...	...	...	...	...	...	300	300
Castor......	950	1,985	...	...	...	...	...	2,935
Total.......	1,550	7,682	920	...	12,000	...	2,753	24,905

ESTIMATED NUMBER OF SHOTS FIRED FOR BLASTING COAL

BITUMINOUS COAL FIELD

Area	Electric Detonators	Prima cord	Airdox	Total
Group 1:				
Cascade.......	25,254	...	...	25,254
Group 2:				
Smoky River...	188	...	...	188
Total.........	25,442	...	...	25,442

SUB-BITUMINOUS COAL FIELD

Area	Electric Detonators	Prima cord	Airdox	Total
Group 4:				
Ardley.......	1,346	...	...	1,346
Brooks.......	2,143	...	...	2,143
Carbon.......	65	...	...	65
Drumheller...	...	...	12,000	12,000
Edmonton.....	4,357	...	...	4,357
Pembina......	3,830	...	...	3,830
Group 5:				
Camrose......	850	...	...	850
Castor.......	3,668	...	...	3,668
Total.........	16,259	...	12,000	28,259

NUMBER OF TONS OF COAL PRODUCED PER POUND OF EXPLOSIVES USED

BITUMINOUS COAL FIELD

Area	Number of tons of coal mined	Number of pounds of explosives used	Tons of coal mined per pound of explosives used
Group 1:			
Cascade.........	333,945	37,800	8.83
Group 2:			
Crowsnest.......	817,173	...	...
Mountain Park...	618,021	...	...
Smoky River.....	1,094,379	81	13,510.85
Group 3:			
Coalspur........	187	...	...
Total..........	2,863,705	37,881	75.60

SUB-BITUMINOUS COAL FIELD

Group 4:			
Ardley..........	21,472	1,300	16.52
Brooks..........	3,515	1,770	1.99
Carbon..........	3,354	93	36.06
Drumheller......	80,406	12,000	6.70
Edmonton........	42,803	4,397	9.73
Pembina.........	2,533,587	2,110	1,200.75
Taber...........	3,457	...	...
Group 5:			
Camrose.........	13,949	300	46.50
Castor..........	1,086,418	2,935	370.02
Sheerness.......	102,719	...	...
Tofield.........	9,312	...	...
Westlock........	19,214	...	...
Total..........	3,920,206	24,905	157.41

QUANTITY OF EXPLOSIVES USED IN POUNDS FOR BLASTING ROCK IN COAL MINES

BITUMINOUS COAL FIELD

Area	Pellet	Monobel	Cilgel	CXL-ite	Amex	Cardox	Forcite	Total
Group 1: Cascade......	...	...	...	1,600	79,000	...	2,000	82,600
Group 2:								
Crowsnest....	...	...	...	12,500	181,350	...	32,100	225,950
Mountain Park	...	...	...	...	5,321,877	...	24,700	5,346,577
Smoky River..	...	78	...	35	...	...	...	113
Total.......	...	78	...	14,135	5,582,227	...	58,800	5,655,240

SUB-BITUMINOUS COAL FIELD

Group 4:								
Brooks......	...	...	950	...	...	...	400	1,350
Total.......	...	...	950	...	...	...	400	1,350

ESTIMATED NUMBER OF SHOTS FIRED FOR BLASTING ROCK
IN COAL MINES

BITUMINOUS COAL FIELD

Area	Electric Detonators	Prima cord	Total
Group 1:			
Cascade...........	3,071	...	3,071
Group 2:			
Crowsnest.........	10,132	...	10,132
Mountain Park.....	312	...	312
Smoky River.......	330	...	330
Total.............	13,845	...	13,845

SUB-BITUMINOUS COAL FIELD

Area	Electric Detonators	Prima cord	Total
Group 4:			
Brooks............	27	...	27
Total.............	27	...	27

ELECTRICITY

Area	Number of Mines using Electricity	Horsepower of Electrical Equipment in Use		Total Horsepower	Purchased Power
		Above Ground	Below Ground		
Ardley..........	1	14	...	14	19,337
Brooks..........	1	40	...	40	53,170
Camrose.........	1	12	...	12	6,000
Carbon..........	1	26	...	26	4,590
Cascade.........	1	5,009	1,714	6,723	12,886,800
Castor..........	3	3,774	...	3,774	4,815,329
Crowsnest.......	1	3,464	3,365	6,829	2,620,000
Drumheller......	2	1,358	793	2,151	570,729
Edmonton........	3	440	655	1,095	245,000
Mountain Park....	1	5,971	...	5,971	13,017,600
Pembina.........	4	12,271	...	12,271	8,984,400
Sheerness.......	1	1,311	...	1,311	100,000
Smoky River......	1	10,392	9,406	19,798	24,100,000
Taber...........	1	79	...	79	7,040
Tofield.........	1	75	...	75	86,450
Westlock........	2	43	...	43	37,720
Total...........	25	44,279	15,933	60,212	67,554,165

COAL-CUTTING MACHINERY

Area	No. of Machines Operated by:			Tons of Coal Mined by:	
	Electricity	Compressed Air		Electricity	Compressed Air
		Picks	Machines		
Cascade.........	3	8	...	192,820	41,632
Crowsnest.......	4	26	...	525,862	60,000
Drumheller......	4	...	...	66,772	...
Edmonton........	8	...	...	27,619	...
Smoky River......	11	...	...	1,094,383	...
Total...........	30	34	...	1,907,456	101,632

ACCIDENTS DURING 1970, CLASSIFIED ACCORDING TO THE MINES IN WHICH THEY OCCURRED

Name of Operator	Area	Above Ground				Below Ground				Total Above and Below Ground
		Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Bituminous										
The Canmore Mines, Limited (2)............................	Cascade....	..	1	5	6	..	..	10	10	16
Coleman Collieries Ltd. (1747)............................	Crowsnest..	1	..	..	1	..	1	..	1	2
McIntyre Coal Mines Limited (1765)........................	Smoky River.	..	..	3	3	..	7	9	16	19
Cardinal River Coals Ltd. (1768)..........................	Mountain Park	..	..	1	1	..	..	..	..	1
* Sub-Bituminous										
Total..		1	1	9	11	..	8	19	27	38

* No accidents reported in the Sub-Bituminous Field

ACCIDENTS AS THEY OCCURRED BY MONTHS DURING THE YEAR 1970

Months	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
January	1	..	..	1	..	..	1	1	2
February	..	..	..	..	..	..	1	1	1
March	..	..	..	..	..	1	2	3	3
April	..	..	1	1	..	..	3	3	4
May	..	..	2	2	..	1	3	4	6
June	..	..	1	1	..	2	1	3	4
July	..	..	..	..	..	1	..	1	1
August	..	..	2	2	..	..	1	1	3
September	..	..	1	1	..	..	2	2	3
October	..	1	..	1	..	1	2	3	4
November	..	..	..	..	..	..	3	3	3
December	..	..	2	2	..	2	..	2	4
Total	1	1	9	11	..	8	19	27	38

ACCIDENTS OCCURRING IN THE PROVINCE ABOVE AND BELOW GROUND DURING THE YEAR 1970

Causes	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Fall of roof or sides	..	..	..	..	..	5	3	8	8
Haulage	..	..	..	..	..	..	5	5	5
Machinery	1	1	4	6	..	3	5	8	14
Miscellaneous	..	..	2	2	..	..	4	4	6
Slipped and Fell	..	..	3	3	..	..	2	2	5
Total	1	1	9	11	..	8	19	27	38

ACCIDENTS OCCURRING IN THE PROVINCE ABOVE AND BELOW GROUND FOR THE YEAR 1970, CLASSIFIED ACCORDING TO THE AREA IN WHICH THEY OCCURRED

BITUMINOUS

Area	Above Ground				Below Ground				Total Above and Below Ground
	Fatal	Serious	Slight	Total	Fatal	Serious	Slight	Total	
Cascade..................	..	1	5	6	..	..	10	10	16
Crowsnest................	1	..	..	1	..	1	..	1	2
Mountain Park............	..	..	1	1	..	..	..	..	1
Smoky River..............	..	..	3	3	..	7	9	16	19
Total....................	1	1	9	11	..	8	19	27	38

SUB-BITUMINOUS

*									

* No accidents reported in the Sub-Bituminous Field.

FATAL ACCIDENTS IN MINES

Joseph Moscianica, Fireman, 60, on January 25th, 1970, at Mine No. 1747, operated by Coleman Collieries Ltd., Coleman. While workman was backing a small payloader down the ramp in front of the boiler room, the payloader turned and went over the edge of the ramp, rolling on top of the workman and causing fatal injuries.

NUMBER OF TONS PRODUCED PER ACCIDENT

BITUMINOUS COAL FIELD

Area	Output	No. of Tons Produced Per Accident			
		Fatal	Serious	Slight	Total
Group 1:					
Cascade............	333,945	...	333,945	22,263	20,871
Group 2:					
Crowsnest..........	817,173	817,173	817,173	...	408,586
Mountain Park.......	618,021	...	...	618,021	618,021
Smoky River.........	1,094,379	...	156,340	91,198	57,599
Group 3:					
Coalspur...........	187	...	...	...	...
Total..............	2,863,705	2,863,705	318,189	102,275	75,361

SUB-BITUMINOUS COAL FIELD

* No accidents reported in sub-bituminous mines					

SUMMARY

Bituminous..........	2,863,705	2,863,705	318,189	102,275	75,361
* Sub-bituminous.......	...	...	...	...	...
Total...............	6,783,911	6,783,911	753,768	242,283	178,524

CLASSIFICATION OF ACCIDENTS ACCORDING TO OUTPUT OF MINES WHICH PRODUCED DURING THE YEAR 1970

Accidents	Under 1,000 tons	1,000 to 5,000 tons	5,000 to 10,000 tons	10,000 to 50,000 tons	50,000 to 100,000 tons	100,000 to 150,000 tons	150,000 to 200,000 tons	200,000 to 300,000 tons	Over 300,000 tons	Total
Fatal....................	...	...	...	...	...	...	...	...	1	1
Serious..................	...	...	...	...	...	...	...	...	9	9
Slight...................	...	...	...	...	...	...	...	...	28	28
Total....................	...	...	...	...	...	...	...	...	38	38

TONS OF COAL PRODUCED PER ACCIDENT

Fatal.....................	...	...	...	...	...	...	...	...	1	6,783,911
Serious...................	...	...	...	...	...	...	...	...	9	753,768
Slight....................	...	...	...	...	...	...	...	...	28	242,283
Total.....................	...	...	...	...	...	...	...	...	38	178,524

ACCIDENTS

SUMMARY TABLE SHOWING ACCIDENTS OCCURRING IN THE MINES FROM 1951 to 1970
INCLUSIVE, REPORTABLE UNDER THE COAL MINES REGULATION ACT.

Year	Output	Accidents			Tons of Coal Mined Per Accident		
		Fatal	Serious	Slight	Fatal	Serious	Slight
1951........	7,661,276	9	85	53	851,253	90,133	144,552
1952........	7,194,472	7	79	79	1,027,782	91,069	91,069
1953........	5,917,423	10	59	60	591,742	100,295	98,623
1954........	4,859,136	8	51	41	607,392	95,277	118,516
1955........	4,456,578	3	54	52	1,485,526	82,529	85,703
1956........	4,329,639	6	34	33	721,607	127,342	131,201
1957........	3,155,354	2	25	15	1,577,677	126,214	210,357
1958........	2,519,939	6	19	8	419,990	132,628	314,992
1959........	2,549,517	1	18	10	2,549,517	141,639	254,952
1960........	2,404,093	2	16	21	1,202,047	150,256	114,481
1961........	2,027,826	1	9	11	2,027,826	225,314	184,348
1962........	2,087,310	4	5	23	521,827	417,462	90,753
1963........	2,289,943	1	3	11	2,289,943	763,314	208,177
1964........	2,971,133	1	3	20	2,971,133	990,378	148,557
1965........	3,413,928	6	3	13	568,988	1,137,976	262,610
1966........	3,467,254	1	4	28	3,467,254	866,814	123,830
1967........	3,601,559	...	4	17	...	900,390	211,856
1968........	3,925,114	...	4	30	...	981,278	130,837
1969........	4,426,060	3	5	17	1,475,353	885,212	260,356
1970........	6,783,911	1	9	28	6,783,911	753,768	242,283

COMPARISON OF PROTECTIVE CLOTHING USED FOR THE YEARS
1968, 1969 and 1970.

Clothing	1968	1969	1970
Hard Hats............	1,030	994	1,751
Safety Shoes, pairs...	691	905	1,568
Goggles, pairs........	160	226	577
Knee Pads, pairs......	...	36	...

COMPARISON OF ACCIDENTS PER 1,000,000 TONS AND PER 1,000 MEN EMPLOYED, 1951 - 1970

Year	Tonnage	Total No. of men employed	Fatal Accidents			Serious Accidents			Slight Accidents			Total		
			No.	Per 1,000,000 tons	Per 1,000 men employed	No.	Per 1,000,000 tons	Per 1,000 men employed	No.	Per 1,000,000 tons	Per 1,000 men employed	No.	Per 1,000,000 tons	Per 1,000 men employed
1951........................	7,661,276	7,339	9	1.17	1.23	85	11.09	11.58	53	6.92	7.22	147	19.19	20.03
1952........................	7,194,472	6,936	7	0.97	1.01	79	10.98	11.39	79	10.98	11.39	165	22.93	23.79
1953........................	5,917,423	5,760	10	1.69	1.74	59	9.97	10.24	60	10.14	10.42	129	21.80	22.40
1954........................	4,859,136	4,719	8	1.65	1.70	51	10.49	10.81	41	8.43	8.69	100	20.50	21.19
1955........................	4,456,578	3,801	3	0.67	0.79	54	12.12	14.21	52	11.67	13.68	109	24.46	28.68
1956........................	4,329,639	3,443	6	1.39	1.74	34	7.85	9.88	33	7.62	9.58	73	16.86	21.20
1957........................	3,155,354	2,795	2	0.63	0.72	25	7.92	8.94	15	4.75	5.37	42	13.31	15.03
1958........................	2,519,939	2,021	6	2.38	2.97	19	7.54	9.40	8	3.17	3.96	33	13.10	16.33
1959........................	2,549,517	1,720	1	0.39	0.58	18	7.07	10.46	10	3.92	5.82	29	11.37	16.86
1960........................	2,404,093	1,729	2	0.83	1.16	16	6.66	9.25	21	8.74	12.14	39	16.22	22.55
1961........................	2,027,826	1,323	1	0.49	0.76	9	4.44	6.80	11	5.42	8.31	21	10.36	15.87
1962........................	2,087,310	1,281	4	1.92	3.12	5	2.39	3.90	23	11.02	17.95	32	15.33	24.98
1963........................	2,289,943	1,151	1	0.44	0.87	3	1.31	2.61	11	4.80	9.56	15	6.55	13.03
1964........................	2,971,133	1,188	1	0.34	0.84	3	1.01	2.52	20	6.73	16.83	24	8.08	20.20
1965........................	3,413,928	1,181	6	1.76	5.08	3	0.88	2.54	13	3.81	11.01	22	6.44	18.63
1966........................	3,467,254	1,146	1	0.29	0.87	4	1.15	3.49	28	8.07	24.43	33	9.52	28.79
1967........................	3,601,559	1,162	...	...	...	4	1.11	3.44	17	4.72	14.63	21	5.83	18.07
1968........................	3,925,114	1,103	...	...	...	4	1.02	3.63	30	7.64	27.20	34	8.66	30.83
1969........................	4,426,060	1,209	3	0.68	2.48	5	1.13	4.13	17	3.84	14.06	25	5.65	20.68
1970........................	6,783,911	1,654	1	0.15	0.60	9	1.33	5.44	28	4.12	16.93	38	5.60	22.97

LIST OF PROSECUTIONS INSTITUTED UNDER THE COAL MINES REGULATION ACT, FOR THE YEAR ENDING DECEMBER 31, 1970.

Mine in which Contravention was Committed	Description of Defendant	Offence Charged	Result of Proceedings	Penalty	Costs
McIntyre Coal Mines Limited...	Miner's Helper	Having in his possession matches for making a light and tobacco for smoking in the form of cigarettes...	Convicted...	Fined $40.00....	$2.25
McIntyre Coal Mines Limited...	Miner's Helper	Having in his possession tobacco for smoking in the form of cigarettes and a lighter.........................	Absconded...	....	...

BOARD OF EXAMINERS

The Board of Examiners during the year consisted of the following:

As representing:

The Mine Inspectorate: P. Melson, Director of Mines.
Managers: H. Crawford and E. J. Panchysyn.
Underground Miners: S. Liska.
Strip Mine Workers: K. D. Wiltse.
Secretary: M. B. Rasmussen.

Examinations for the following classes of certificates were held in Edmonton, Calgary and Grande Cache on May 5th, 6th and 7th, 1970.

Fourteen candidates presented themselves for examination for First Class (Underground) Certificates, and two were successful.

Seven candidates presented themselves for examination for Second Class (Underground) Certificates, and three were successful.

Twenty-five candidates presented themselves for examination for Third Class (Underground) Certificates, and nine were successful.

Twenty-three candidates presented themselves for examination for First Class Mine Electricians' Certificates, and ten were successful.

One candidate presented himself for examination for Second Class Mine Electrician's Certificate, and he was successful.

Four candidates presented themselves for examination for Surveyors' (Underground) Certificates, and two were successful.

Two candidates presented themselves for examination for Surveyors' (Strip Mine) Certificates, and both were successful.

Three candidates presented themselves for examination for Managers' (Strip Mine) Certificates, and all were unsuccessful.

Thirteen candidates presented themselves for examination for Foremen's (Strip Mine) Certificates, and three were successful.

Five candidates presented themselves for examination for Blasters' (Strip Mine) Certificates, and two were successful.

The following list gives the names of successful candidates.

UNDERGROUND MINES

FIRST CLASS

Name	Address	Cert. No.	Date of Certificate
Stephenson, H. G.	Canmore	9	2- 6-70
Little, G. S. A.	Grande Cache	10	9- 6-70

SECOND CLASS

Name	Address	Cert. No.	Date of Certificate
Moreton, I.	Grande Cache	12	18- 8-70
Hall, C. D.	Grande Cache	11	27- 7-70
** Dowling J.N.	Canmore		

THIRD CLASS

Dunn, T.	Grande Cache	40	8- 6-70
Powers, R.	Grande Cache	41	8- 6-70
Latvala, E.	Canmore	43	11- 6-70
Marquardt, R. M.	Coleman	44	12- 6-70
Taje, E.	Coleman	45	12- 6-70
Smode, A.	Grande Cache	46	12- 6-70
Hubman, W. H.	Canmore	47	18- 6-70
Reichel, H. F.	Coleman	48	19- 6-70
Fuchs, W.	Coleman	49	19- 6-70

SURVEYOR

Wright, P. L.	Grande Cache	9	9- 6-70
Graham, W.	Grande Cache	10	22- 6-70

FIRST CLASS MINE ELECTRICIAN

Holmes, G.	Grande Cache	21	9- 6-70
Lester, A.	Grande Cache	22	9- 6-70
Wiltse, K. D.	Forestburg	23	10- 6-70
Woodfine, A. P.	Grande Cache	24	10- 6-70
Wardle, H. A.	Grande Cache	25	11- 6-70
Lawson, J.	Grande Cache	26	12- 6-70
Kawasaki, T.	Coleman	27	13- 7-70
** Harvey, R. G.	Grande Cache		
** Manning, J. A.	Grande Cache		
** Steadman, S.	Grande Cache		

SECOND CLASS MINE ELECTRICIAN

Graham, M.	Grande Cache	10	8- 6-70

STRIP MINES

SURVEYOR

Procyshyn, K. L.	Hinton	3	9- 6-70
Tuttle, P. D.	Fort McMurray	4	16- 6-70

FOREMAN

Bish, J. W.	Forestburg	58	10- 6-70
Gosney, J.	Hinton	59	30- 6-70
Halluk, S. A.	Canmore		

BLASTER

Weston, W. J.	Robb	12	9- 6-70
Pinet, J. P.	Canmore	13	1- 9-70

** Certificate not issued as at December 31st, 1970.

The following interchange certificates were issued under Section 79 of The Coal Mines Regulation Act.

FIRST CLASS

Gallagher, J. N.	Grande Cache	8	1- 6-70

SECOND CLASS

Edgar, J. M.	Grande Cache	10	9- 6-70

In addition to the foregoing, the following certificates were issued to successful candidates in the examinations held in 1969.

FIRST CLASS

Cook, G.	Edmonton	6	18-11-69
Parkes, D.M.	Edmonton	7	15- 5-70

THIRD CLASS

Brady, R.	Grande Cache	42	10- 6-70
Gray, G.	Grande Cache	50	8- 7-70

SECOND CLASS MINE ELECTRICIAN

Souvie, R. T.	Canmore	9	8- 4-70

STRIP MINE FOREMAN

Doerr, K. C.	Calgary	57	13- 1-70

STRIP MINE BLASTER

Emblau, A. A.	Canmore	11	20- 1-70

The following certificates as Manager (Strip Mine) were issued, without examination, under Section 74 (2) of The Coal Mines Regulation Act.

Parkes, D. M.	Grande Cache	27	15- 5-70
Stephenson, H. G.	Canmore	28	30- 7-70

EXAMINATIONS UNDER THE QUARRIES REGULATION ACT

Written examinations under The Quarries Regulation Act were held on May 5th, 1970, at Edmonton and Calgary.

Five candidates presented themselves for examination for Managers' Certificates, and all were unsuccessful.

Four candidates presented themselves for examination for Foremen's Certificates, and all were unsuccessful.

The following list gives the names of successful candidates, by oral examination, for Quarry Blasters' Certificates.

QUARRIES

BLASTER

Name	Address	Cert. No.	Date of Certificate
Taylor, K. R.	Robb	79	9- 3-70
Harrison, E. B.	Cadomin	80	25- 9-70

LIST OF MINES PRODUCING DURING

The Year 1970

Character of Coal:- Bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
	Cascade Area				
2	The Canmore Mines Limited....	Canmore...........	Parts 24-10-5	Canmore Smokeless Coal, Canmore Briquettes........................	1891
	Crowsnest Area				
1695	Coleman Collieries Ltd.......	Coleman...........	12- 7- 6-5	Coleman Coal......................	1949
1747	Coleman Collieries Ltd.......	Coleman...........	16-19- 9- 4-5	Vicary Creek Coal.................	1957
1764	Coleman Collieries Ltd.......	Coleman...........	5&6-10- 4-5	Vicary Creek Coal.................	1966
	Coalspur Area				
1692	Coalspur Coal Company Ltd....	Robb..............	7-33-48-21-5	King Coal.........................	1963
	Mountain Park Area				
1768	Cardinal River Coals Ltd.....	Hinton............	15,16,22-47-24-5	Cardinal..........................	1969
	Smoky River Area				
1765	McIntyre Coal Mines Ltd......	Grande Cache.......	57- 8-6 & 58- 9	....	1967

LIST OF MINES PRODUCING DURING

The Year 1970

Character of Coal:- Sub-bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
	Ardley Area				
809	Sisson's Mine..............	Alix.................	S.W. ¼ of 2-39-23-4	Sisson's Coal......................	1919
	Brooks Area				
1404	Kleenbirn Collieries Ltd....	Bow City.............	Pts. of 15-17-17-4	Birnwel Coal......................	1932
	Camrose Area				
724	Burnstad Coal Ltd..........	Round Hill...........	N. ½ of 6-14-48-18-4	Burnstad's Coal...................	1917
	Carbon Area				
194	New Ghost Pine Coal Co. Ltd.	Three Hills..........	4&9-31-22-4	New Ghost Pine Coal...............	1909
	Castor Area				
1046	Alberta Coal Ltd...........	Halkirk..............	15&16-20-40-15-4	Cordel Coal, Vesta Coal, Sterling, Victory Coal, Blue Flame Coal......	1922
1578	Forestburg Collieries Ltd...	Forestburg...........	N.W.¼ of 6-41-15-4	Diplomat Coal, Ambassador..........	1941
1614	Stettler Coal Co. Ltd.......	Halkirk..............	11-25-40-16-4	All-Fire Coal.....................	1943
	Drumheller Area				
1666	Subway Coal Company.........	Rosedale.............	15-16-28-19-4	Subway Goal.......................	1947
1742	Century Goals Limited.......	East Coulee..........	14- 6-27-18-4	Atlas Coal, Commander Coal, New Wild Fire Coal, New Murray Coal, Western Gem, Hy-Grade, Purity Hard.........	1956

LIST OF MINES PRODUCING DURING

The Year 1970

Character of Coal:- Sub-bituminous

MINE NO.	OPERATOR	MINE OFFICE ADDRESS	MINE LOCATION L.S. S. T. R. M.	REGISTERED TRADE NAME	DATE OF OPENING
	Edmonton Area				
1582	Egg Lake Coal Co. Ltd........	Morinville..........	W. ½ of 36-56-26-4	Egg Lake Coal......................	1941
1626	Star-Key Mines Limited.......	St. Albert..........	16,10&11-35-54-25-4	Star-Key Coal......................	1945
1727	Whitemud Creek Coal Co. Ltd..	Edmonton............	S.W.¼ of 13-52-25-4	Red Hot Coal.......................	1952
	Pembina Area				
1670	Warburg Coal Co. Ltd.........	Warburg.............	12-13-49- 3-5	Pinter Coal........................	1948
1739	Charles Ostertag.............	Evansburg...........	S.W.¼ of 10-54- 7-5	Pembina Peerless Coal..............	1954
1757	Alberta Coal Ltd.............	Wabamun.............	Pts. of 14&15-53- 4-5	Whitewood..........................	1962
1769	Calgary Power Ltd............	Seba Beach..........	3 29-52- 4-5	Highvale...........................	1969
	Sheerness Area				
443	Alberta Coal Ltd.............	Sheerness...........	S.E.¼ of 13-29-13-4	Roselyn, Berry Creek, Volcano.......	1915
	Taber Area				
1766	Henry Miller (Taber Ajax)....	Taber...............	4,10&11-10-17-4	Taber Ajax.........................	1968
	Tofield Area				
215	Dodds Coal Mining Co. Ltd....	Ryley...............	S.½ of 14-49-18-4	Dodds Coal.........................	1909
	Westlock Area				
1523	Picardville Coal Co.(1960) Ltd.	Picardville.........	16-35-58-27-4	Picardville Coal...................	1960
1562	North Point Coal Co. Ltd.....	Thorhild............	1-11-60-21-4	North Point Coal...................	1939

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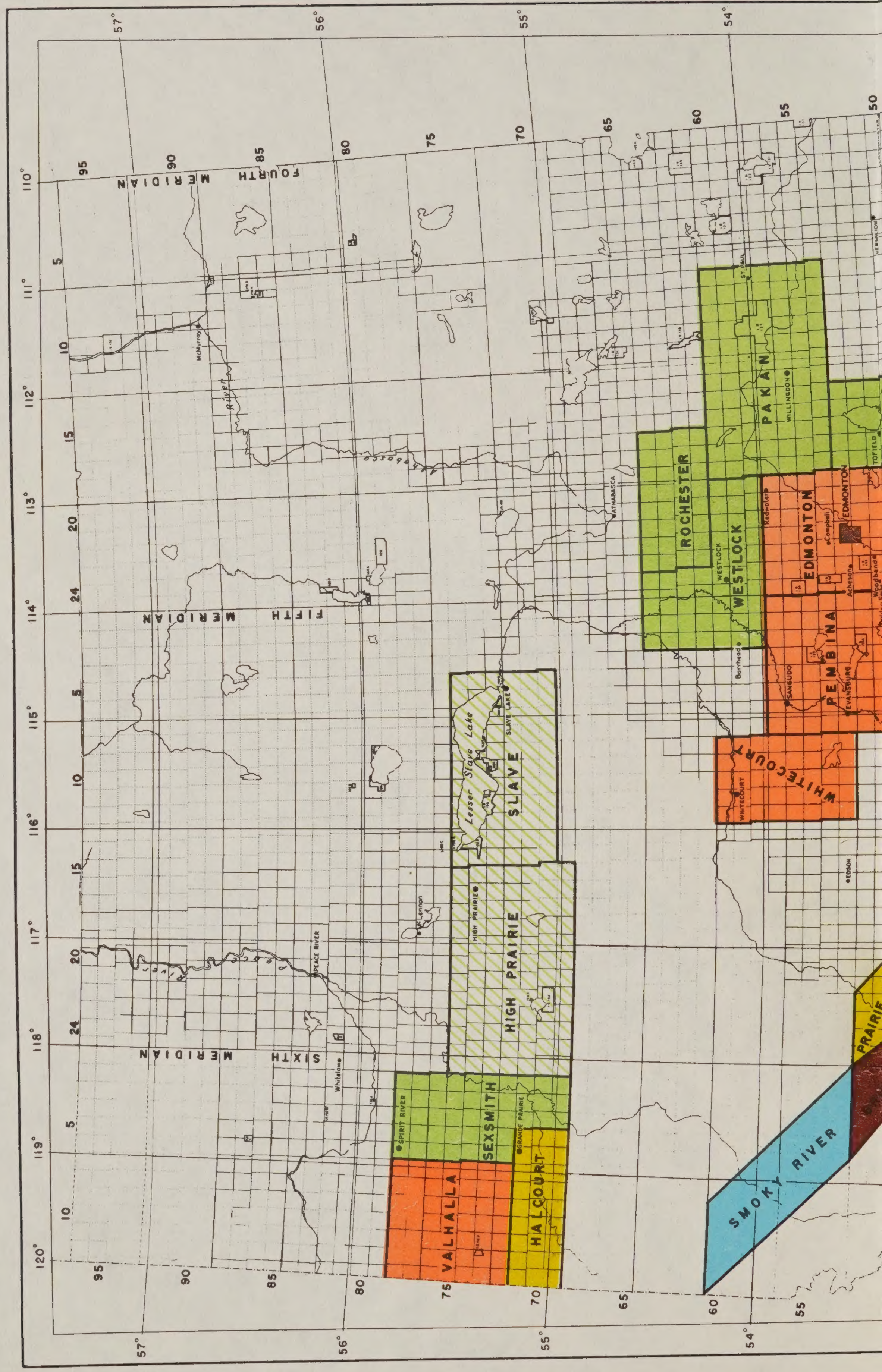
COAL AREAS
IN ALBERTA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SIXTH MERIDIAN
McMurray
Athabasca River
Peace River
Lesser Slave Lake
ATHABASCA
ST. PAUL
WILLINGDON
VERMILION
TOFIELD
WESTLOCK
Barrhead
Redwater
Campbell
EDMONTON
Acheson
Woodbend
SANGUDO
EVANSBURG
WHITECOURT
EDSON
SLAVE LAKE
HIGH PRAIRIE
McLennan
PEACE RIVER
Whitelaw
SPIRIT RIVER
GRANDE PRAIRIE
ROCHESTER
PAKAN
WESTLOCK
EDMONTON
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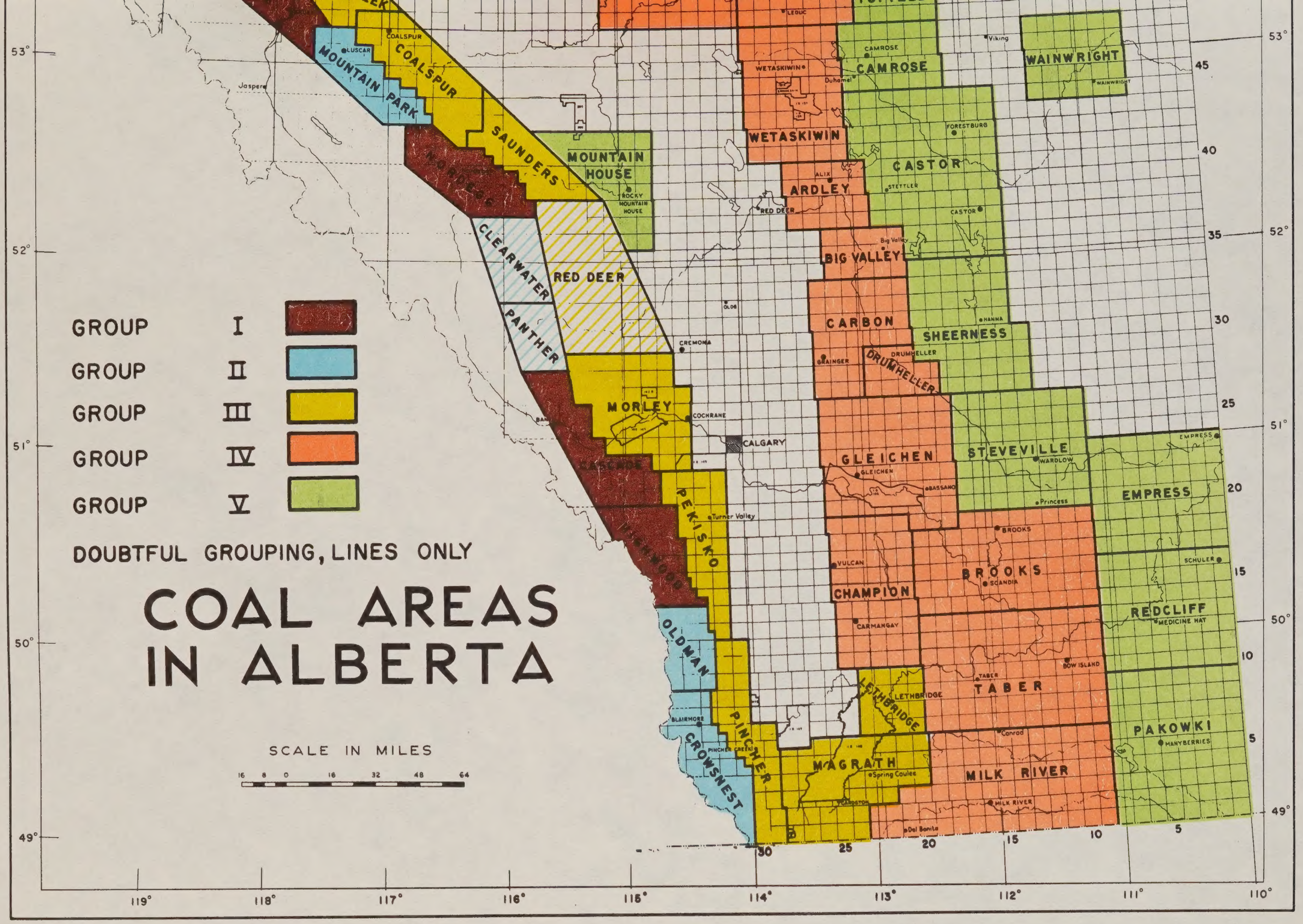

COAL AREAS IN ALBERTA